


HANDOUT

HANDOUT


Commonwealth of Virginia's
Communications Interoperability



2006
Virginia
Interoperability
Communications
Conference

Understanding Mutual Aid and Interoperability
Channels Statewide

OCT 3, 2006

Interoperability in Virginia

www.interoperability.publicsafety.virginia.gov

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Panelists

- *Jim Sobecke, Mutual Aid & Interoperability IAT Co-Lead*
- *Don Bowers, Capt., Fairfax County Fire and Rescue*
- *Charlie Hoffman, NTIA Emergency Planning and Public Safety Division*
- *Derek Kelly, Metropolitan Washington Airports Authority & IAT Lead*



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Agenda



- Background
- FY 2006 Activities
- FY 2007 Activities
- Interoperability
- Federal Interoperability Perspective
- Interoperability & Operability
- Questions and Discussion



Interoperability



- Approaches to interoperability
 - Disparate radio systems
 - Multiple solution sets
 - New and competing technologies
- Obsolescence versus funding
- Planning, procedures and training
- Human factor



Background



- **“Mutual Aid Channel”** usually applies to an agreement between and among adjoining jurisdictions to share a common channel for ‘operability’ when crossing into another’s jurisdiction.
- **“Interoperability Channels”** are designated specifically for coordination and communications between responders without a geographic restriction (i.e., statewide or nationwide).



Situation



- **“Mutual Aid Channels”** may not be recognized in other parts of the state or neighboring counties for general interoperability, and in fact may be used for dispatch or other purposes.
- **“Interoperability Channels”** are for emergency use only - not to be used on a day-to-day basis or for administrative purposes.



FY 2006 Activities



Initiative Action Team (IAT) 6

Chartered to address Initiative 6 of the FY 2006 Strategic Plan:

“Promote the use of local, regional, state, and federal mutual aid channels to foster interoperable communications.”



FY 2006 Activities



IAT - 6 Methodology:

- Developed a Mutual Aid Channel Database
- Organized data collection methodology to coincide with the 7 Commonwealth regions recognized by the Governor
- Email contact was made with all of the 7 Regional PSAP Managers to solicit their support in this effort



FY 2006 Activities



IAT- 6 Recommendations:

- (Initiative 10) Endorse and promote the use of nationally recognized interoperability channels in the VHF, UHF and 800 MHz bands;
- Complete the data gathering effort;
- Develop interoperability implementation guidelines



FY 2007 Activities

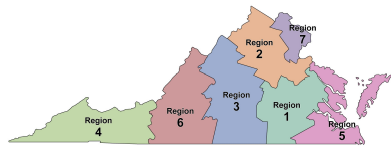


IAT- 6 Objectives

- Continue data gathering efforts
- Request regional facilitators and team members
- Re-look at CASM as a data source
- Develop an approach for implementing statewide interoperability
- Proposal presentation (May 2007)



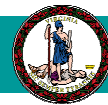
Interoperability Perspectives



Statewide Interoperability Implementation Planning



Commonwealth Interoperability



- Challenges to interoperability
 - Disparate radio systems
 - Multiple solution sets
 - New and competing technologies
- Obsolescence versus funding
- Planning, procedures and training
- Human factor



Commonwealth Interoperability



EXAMPLE

MUTUAL AID – an agreement between (local) jurisdictions for the sharing of resources – day-to-day basis; preplanning

PMARS

SIRS

EMS MA (155.205)

INTEROPERABILITY – a set of standards invoking commonality in operations - having wide application (statewide, regional, national)

1CAL18

4TAC32

8TAC93



Commonwealth Interoperability



Law Enforcement

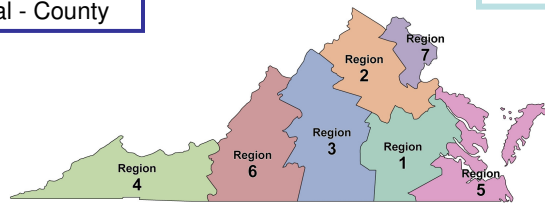
SIRS
STARS
NLEC
Local - County

FIRE

VHF Mutual-Aid
Channels

EMS

HEARS
MED COM



Regional 800 MHz
Trunked Systems

VDEM S&R



Commonwealth Interoperability



Law Enforcement Interoperability Channels

39.46	-----	3 LAW 1
39.54	STARS	
45.86	-----	3 LAW 3
155.4750	NLEEC	1 LAW 16
155.4825	-----	1 LAW 17

H

FIRE VHF Interoperability Channels

154.2650	FIRE M-A	1 FIR 7
154.2800	FIRE M-A	1 FIR 9
154.2950	FIRE M-A	1 FIR 11



Commonwealth Interoperability



EMS Interoperability Channels

152.0075	-----	1 EMS 6
155.2050	EMS MA	- - - - -
155.3400	HEAR	1 EMS 14
155.3475	HEAR	1 EMS 15

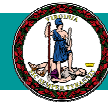
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Search & Rescue

155.1600	VDEM S&R	-----
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Commonwealth Interoperability



Any Public Safety

VHF Interoperability Channels

155.7525	-----	1 CAL 18	H
157.2050	-----	1 TAC 19 D	
157.2750	-----	1 TAC 20 D	
157.2250	-----	1 TAC 21 D	
158.7375	-----	1 TAC 22	
159.4725	-----	1 TAC 23	
161.8500	-----	1 TAC 24	
161.8250	-----	1 TAC 25	
161.88750	-----	1 TAC 26	

Formerly V-CAL / V-TAC



Commonwealth Interoperability



Any Public Safety

UHF Interoperability Channels

453.2125	-----	4 CAL 27 D	H
453.4625	-----	4 TAC 28 D	
453.7125	-----	4 TAC 29 D	
453.8625	-----	4 TAC 30 D	
453/458.2125	-----	4 CAL 31	
453/458.4625	-----	4 TAC 32	
453/458.7125	-----	4 TAC 33	
453.458.8625	-----	4 TAC 34	

Formerly U-CAL / U-TAC



Commonwealth Interoperability



&H

NCC Interoperability Channel Designations

N A
BAND

A A A
FUNCTION

N N N
UNIQUE
CHANNEL
NUMBER

SUFFIX
D=DIRECT
(TALK-AROUND)

D



Commonwealth Interoperability



NCC Interoperability Channel Designations

H

N A
BAND

A A A

N N N

D

BAND
DESIGNATOR

1 – VHF HI
3 – VHF LO
4 – UHF
7 – 700 MHz
8 – 800 MHz

1F – FED VHF
4F – FED UHF

F = Federal

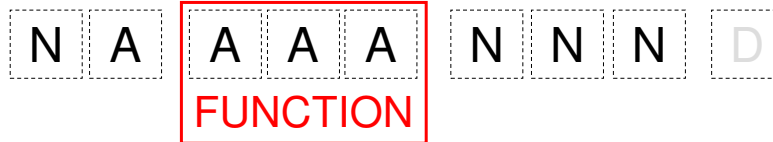


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NCC Interoperability Channel Designations

H



C A L = CALLING

D A T = DATA

E M S = MEDICAL

F I R = FIRE

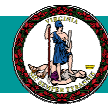
L A W = LAW ENFORCEMENT

M O B = MOBILE REPEATER

T A C = TACTICAL

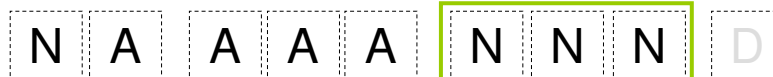


Commonwealth Interoperability



NCC Interoperability Channel Designations

&H



UHF

27 - 30

31 - 34

VHF-HI

5 - 26

FED VHF LAW

35 - 39

VHF-LO

1 - 4

FED VHF INCIDENT

40 - 44

FED UHF LAW

45 - 51

FED UHF INCIDENT

52 - 57

800 MHz

90 - 94

700 MHz

58 - 89



Commonwealth Interoperability



&H NCC Interoperability Channel Designations

N A A A A N N N D

UNIQUE
CHANNEL
NUMBER

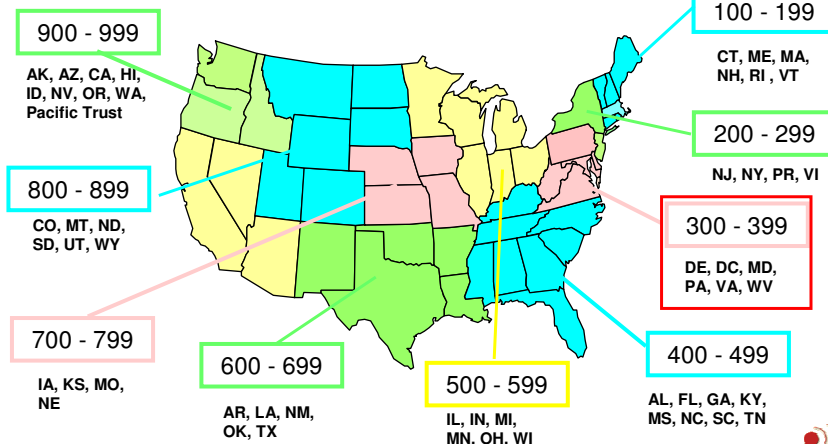
CHANNEL DESIGNATORS

100 – 999

FEMA Regions



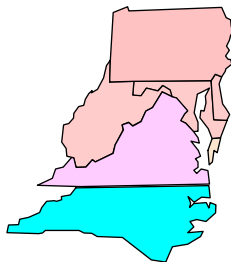
Commonwealth Interoperability



Commonwealth Interoperability



FEMA REGION III



300 - 399

DE

DC

MD

PA

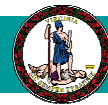
VA 3NN - 3NN

WV

NC 4xx - 4xx



Commonwealth Interoperability



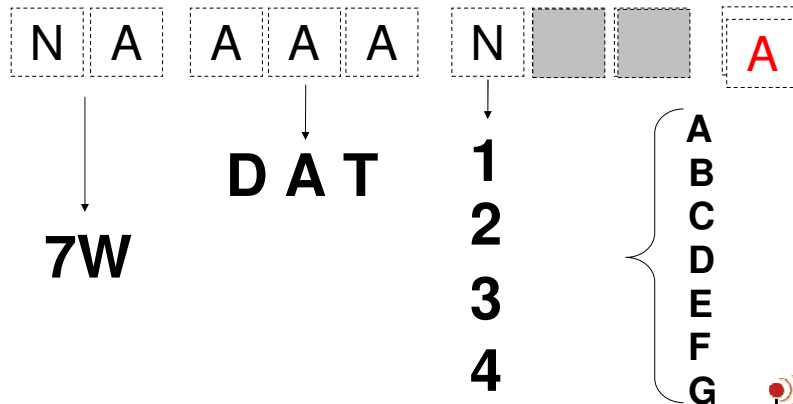
H NCC Interoperability Channel Designations

N A A A A N N N A

700 MHz
WIDEBAND



H



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Implementation Plan - Guidelines

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Commonwealth Interoperability



Statewide Agencies Radio System (STARS)

Is SIRS still a viable *statewide* channel for *interoperability* ?

Should each VSP District Dispatcher monitor interoperability **calling** channels?

8CAL90

1CAL18

4CAL31

Should each VSP District Dispatcher have access to and control (repeater function) of **8TAC91** base stations?

Could COMLINC provide STAR users with direct access to designated Interoperability Channel located at strategic radio sites:

8TAC92

1TAC22

4CAL32



Commonwealth Interoperability



Questions?

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Federal Interoperability

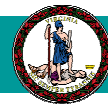


Charlie Hoffman

**NTIA
Emergency Planning
And Public Safety Division**



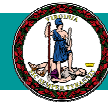
Federal Interoperability



- **NTIA set aside 40 narrowband channels within the 162-174 MHz and 406.1-420 MHz bands for interoperable communications with Federal agencies for law enforcement (LE) and incident response (IR) operations. These are to be used on a shared basis, with no exclusive use by any one agency.**



Federal Interoperability



- **NTIA approved IRAC-recommended change to NTIA policy for more streamlined use of I/O channels:**
 - Eliminated need for Federal written certification.
 - Available for use among Federal agencies and between Federal agencies and non-Federal entities with a requirement to interoperate.
- **Restrictions for Use**
 - Not authorized for routine or administrative uses.
 - Only narrowband emissions are to be used on Federal I/O channels.
 - Subject to condition that harmful interference will not be caused to Federal stations.



Federal Interoperability



- **NTIA working with FCC to determine non-Federal rules for use.**
- **Coordination:**
 - **Major events** (i.e., hurricane, earthquake, terrorist, etc.)
 - Coordination through ESF#2 Frequency Management Cell
 - Joint Field Office Communications Chief if ESF#2 not activated.
 - **Routine Interoperability** (i.e., joint HAZMAT spill, joint law enforcement event, etc.)
 - Coordination between Federal agency and non-Federal entities.



Federal Interoperability



Proposed Additional Changes

- **Special Temporary Authorizations** - Not required if incident lasts less than 7 days.
- **Programming of Radios** - Working with FCC to allow this on non-Fed radios.
- **Training** - Routine training using I/O channels recommended and encouraged.
- **New Channels** - Channel plan in VHF band requires identification of new I/O channels.
- **Reciprocity** – Non-federal offer of I/O channels



Federal Interoperability



Questions?

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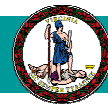
Interoperability Channels & Operability



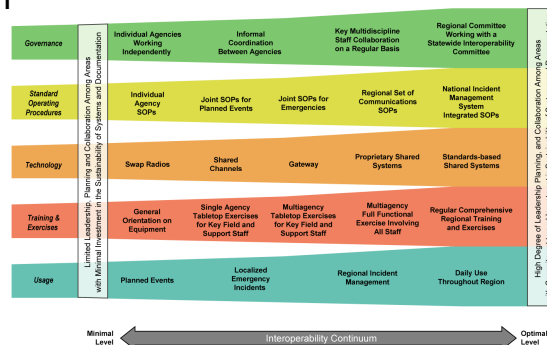
Don Bowers, Captain
Fairfax County Fire & Rescue



Interoperability Channels & Operability



- Free Resources
- Shared Channels on the Interoperability Continuum



Interoperability Channels & Operability



- **Shared Channels (SAFECOM)**
- Interoperability is promoted when agencies share a common frequency band, air interface (analog or digital), and are able to agree on common channels. However, the general frequency congestion that exists across the United States can place severe restrictions on the number of independent interoperability talk paths available in some bands.



Interoperability Channels & Operability



- Most interoperability efforts are planned and achieved regionally
 - Interoperability Channels may fit a niche in your locality
 - In-Band tactical channels when limited frequencies are available
 - Multiple jurisdictions with one or two channels each
 - Combined with cross-band patch for multi-band interoperability



Interoperability Channels & Operability



- Interoperability channels are of significant value when resources are required from outside of the region
 - Incident Command establishes Staging area with Cross-band patched Interoperability tactical channel
 - All public safety responders maintain interoperability channels in radios
 - Result = All inbound responders achieve communications with Staging, once within range of site



Interoperability Channels & Operability



- Enhanced Utilization of Interoperability Channels
- Tactical repeaters
 - Extended local area coverage for incident scene
- Fixed Site Infrastructure
 - Wide-area coverage for established geographic region



Interoperability Channels & Operability



- Operational Challenge
 - Determine Frequency Availability
 - Identify state-wide channels
 - Identify regional channels
 - Program Radios with In-Band Channels
 - Communications Plan
 - Integrate Cross-band patches and repeaters if warranted by incident needs



Interoperability Channels & Operability



Questions?

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PANEL DISCUSSION



NOTES





Thank you

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